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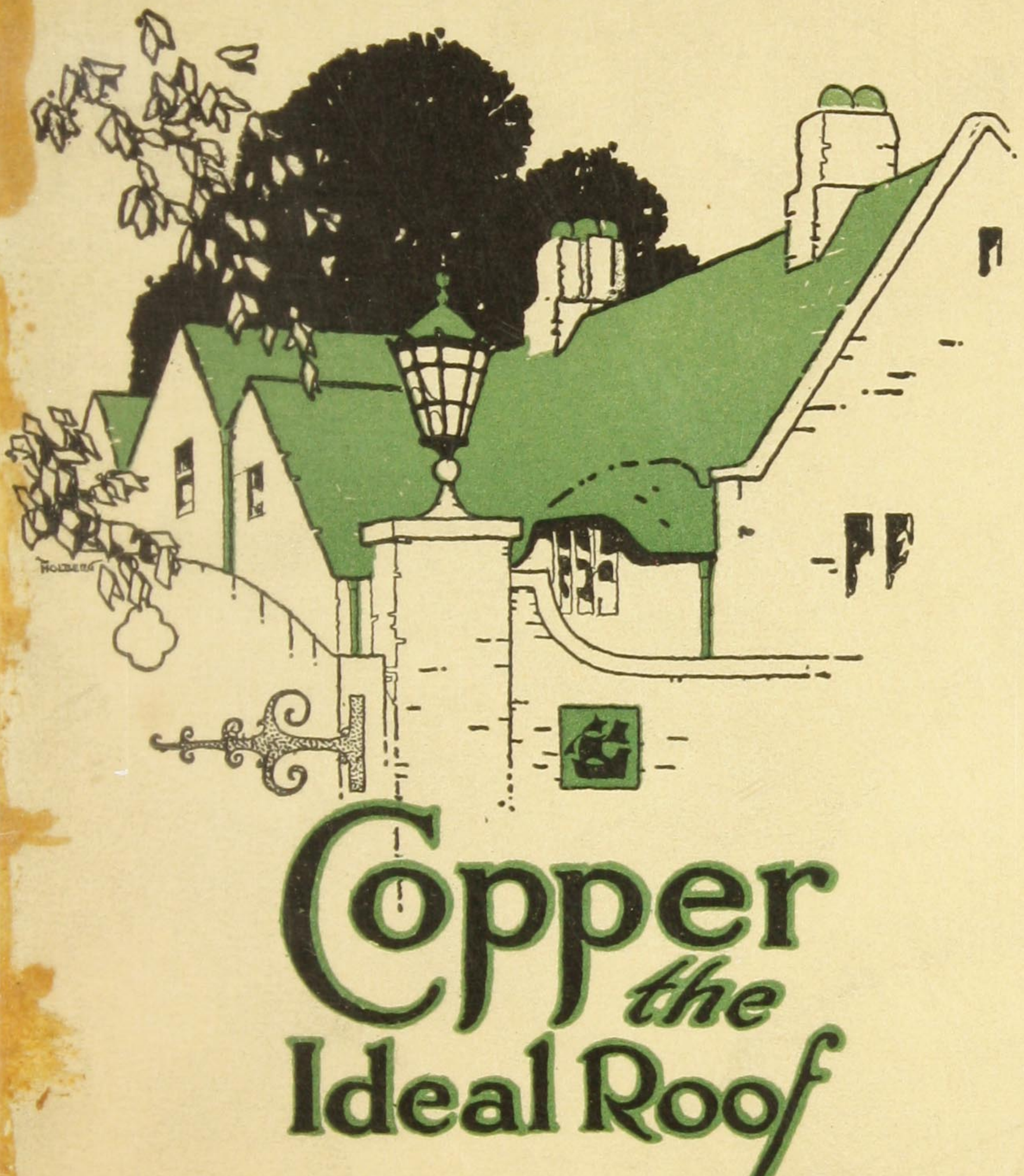

Copper the Ideal Roof

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The copper roof on Christ Church is 173 years old and is still giving splendid service

COPPER

—*the ideal roof*

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COPPER

—the ideal roof

THE ROOF

THE Roof, whether on a public or a private building, has always involved in equal parts, the questions of construction and design.

Structurally considered, the roof must possess stability and must afford, as nearly as human ingenuity can contrive, a thorough protection of the building beneath it from the weather. The best roof, obviously, is the one which will afford the maximum of protection with a minimum of maintenance cost.

Considered from the point of view of design, the architect is concerned equally with the profile or contour of the roof as related to the building, and with the artistic effect obtainable from the roofing material which he selects.

THE COPPER ROOF

It is the purpose of this booklet to point out the unique structural and artistic advantages which are afforded to architect and owner in the use of copper for any type of roof, as applied to any type of building.

KINDS OF ROOF

While there is a great variety of roofs, the principal types, of which all others are variants, can be confined to five, as follows:

1. The Mansard Type
2. The Gable Type
3. The Gambrel Type
4. The Hip Type
5. The Flat Type

1. THE MANSARD

The mansard was widely popular in the design of dwellings of fifty years ago, and many examples, both good and bad, exist throughout the country today. The chief advantage of the mansard roof lies in its maximum utilization of space on

the top floor, and its greatest failing appears when, through poor architectural treatment, the building looks top-heavy. This type, or a modification of it known as "Combination Hip and Flat Deck" is particularly adapted to large public buildings where a distinctly formal roof aids the design.

2. THE GABLE

The gable roof is the plain pointed roof which is confined almost entirely to dwellings. Its effect depends upon the pitch of the roof, meaning its inclination or degree of steepness, and upon the skill with which dormer windows and chimneys are introduced to break its monotony.

3. THE GAMBREL

The gambrel roof is a form of gable roof with two different pitches. Its distinguishing characteristic is the shoulder, and the pitch from ridge down to shoulder and from shoulder down to eaves varies with different local types. A marked

difference, for example, is apparent in the steep gambrel roofs of New England and the low, graceful sweep of the gambrel characteristic of the Dutch Colonial houses of New York State, New Jersey and further south.

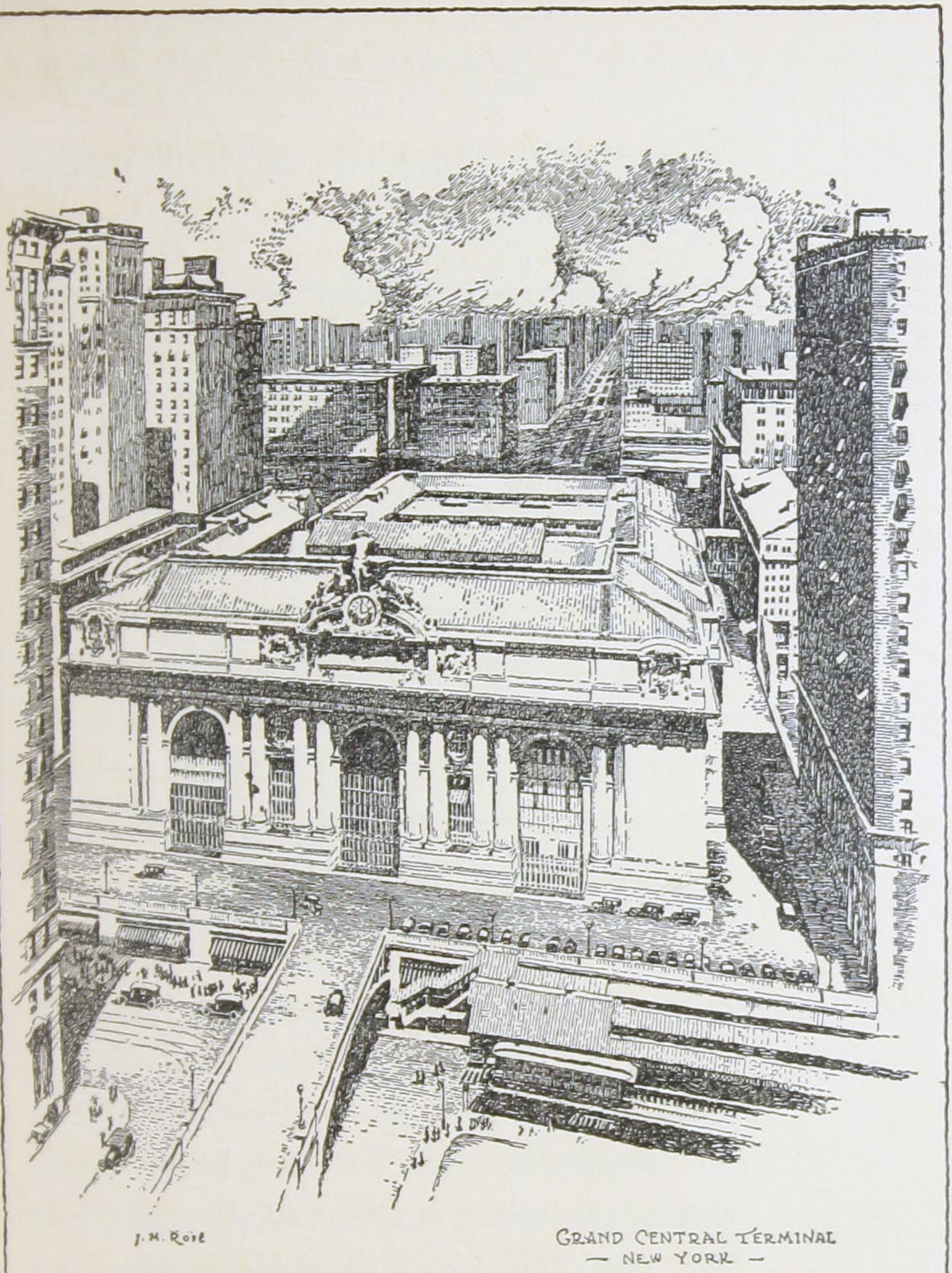
4. THE HIP

In the hip roof, four rafters run up diagonally from the corners to meet the ridge.

This is the type of roof not so frequently seen in dwellings as the gable and the gambrel, but very frequently seen in large public buildings. Its symmetry from side or end commends it for use in architectural projects of a formal nature.

5. FLAT ROOFS

The flat roof, as its name implies, is a roof in which the element of design enters hardly at all. Roofs which are literally flat are usually only portions of roofs, such as small deck areas, for even a flat roof usually has a two-way or one-way pitch sufficient to drain water to gutters,



Copper, the Ideal Roof, adds dignity and charm to the beautiful
Grand Central Terminal

even though this pitch be so slight as to be hardly perceptible.

COPPER FOR ROOFS

The ideal of a roof, in one word, is summed up in permanency—in the idea of a roof which can withstand all the elements for an indefinite period of time without repairs or repainting. The roof of copper will last as long as the building it covers—so far as we can humanly use the term, it will last forever, with no maintenance cost. Exhaustive investigation of the physical and chemical properties of copper have proved conclusively that it is in every respect the logical roofing material.

SHEET COPPER

Copper is made into sheets of almost pure metal, the impurities being less than one tenth of one per cent. It is purer than other metals as they are ordinarily manufactured for industrial purposes, and is less active chemically than any but the noble metals. This immunity to

chemical attack insures a high resistance to corrosion by air, water, acids and other agencies. In comparison with other metals its endurance may be counted by decades rather than years. From a relative point of view it may justly be called the Everlasting Metal for roofings. For strength coupled with ductility it is unexcelled.

ITS ECONOMY

There is no maintenance cost for the roof of copper, because it requires no paint and it is impervious to the elements. Its first cost is its only cost, and even this is less than the cost involved in the roof of slate or tile.

LIGHT WEIGHT

A distinct factor of economy in the roof of copper lies in its light weight, which permits light instead of heavy roof framing. The following table affords an interesting basis for comparison of the relative weights of seven types of roofing as

compared with two types of copper roofing:

Material	Weight per 100 sq. ft. Laid
Shingle Tile	1200—1800 lbs.
Spanish Tile	650— 850 "
Slate	450— 675 "
Felt and Gravel (or Slag)	400— 625 "
Asbestos Shingles	300— 650 "
Hardlead Sheets	210— 325 "
Wood Shingles	200— 300 "
20 g. Galv. Iron (Corrugated)	225 "
16 oz. Copper (Standing Seam)	125 "
Copper Shingles	84— 100 "
Tin	75 "

The saving in the structural cost of the framing is thus apparent and demonstrable.

TYPES OF COPPER ROOF

There are four methods of laying copper roofs, three using sheet copper and one copper shingles.

BATTEN TYPE

The Batten or Ribbed type has, as its salient feature, evenly-spaced battens or ribs running with the slope of the roof.

These ribs are usually about two by two and one-half inches, with sides beveled, and are spaced about twenty inches apart. The roof is made of soft copper worked over the battens.

It is not the least expensive type, for obviously it uses more copper and requires more labor than other types. It has in its favor dignity, character and beauty, and by its very construction safely provides against expansion and contraction. On large steep roof areas, such as mansards and gables, for public buildings, churches, or large residences, it gives dignity and character to the structure, lending itself readily to the scheme of ornamentation.

STANDING SEAM TYPE

The second type of copper roof is the Standing Seam Type. Here the construction of the seams amply provides for movement of the metal, due to

A residence at New Rochelle, N. Y., roofed with Copper Shingles

changes in temperature, and successfully avoids that monotony characteristic of large roof areas poorly treated. This type, it can readily be seen, is somewhat similar to the batten type and has certain advantages over it, it is less expensive and can be used artistically on smaller buildings having flatter roofs. Like the batten type it can be used on roofs with steep slopes.

FLAT SEAM TYPE

The Flat Seam or third type of copper roof requires a soldered joint. This type of construction is used on flat areas such as porch roofs, mansard tops, flat wide dormers, and entrance canopies.

COPPER SHINGLES

Another form of copper roofing is Copper Shingles. These are made from roofing temper copper sheets in a variety of sizes and designs. The method of application is simple. Each shingle is secured to the roof sheathing by copper nails and laps

over the adjoining ones in such a manner as to form a water tight joint. No soldering is required. No allowance for expansion is necessary, as the form of the shingle provides ample room for movement.

Copper shingles can be laid equally well on new roofs or over old shingles. Because of their raised-butt construction they are lifted slightly, thus providing an air space beneath the surface and the roof sheathing, allowing perfect ventilation with consequent coolness in summer.

Copper shingles are light. A roof as covered weighs only one-ninth as much as slate and one-third as much as wood. This feature means a real economy in structural framing.

Every roof requires flashings, which should always be of copper. These are pieces

of metal used at places where breaks in the roof surface occur, as at the chimneys, dormers, or where a change in direction of the roof surface forms a "valley" down which rain water flows to the gutters, or where the roof ends against a vertical wall or joins another as a dormer roof does the main roof. At these places it is necessary to cover the joint, and the piece of copper by which it is done is given the name "Flashing." Every good roofing contractor knows how to flash properly, and if copper is used no breaks are possible at the joints.

FLASHINGS, GUTTERS AND LEADERS

Copper gutters and leaders (or down spouts) have the same durability, the same beauty, and the same absence of maintenance costs as are manifest in the copper roof.

In addition when copper gutters and leaders are used they become a distinc-

A town house in East 70th Street, New York, with copper roof and copper cornices

tive and attractive part of the architectural design.

THE BEAUTY OF COPPER ROOFS

Copper has a peculiar advantage over other metals used for roofing in that it contains in itself all the requirements of decoration. Left alone it gradually weathers to a soft green tone; or it can be oiled and left to mellow to that dull bronze color which is seen only in copper. In the form of shingles it can be specially treated to obtain varied and beautiful effects in harmonious colors which range through autumn reds, russet browns, olive green, verde antique and emerald greens, blue greens and even a rich peacock blue.

Near salt water copper roofs can be used with the assurance that they will gradually assume a natural, soft green color, as beautiful as it is permanent—and non-corrosive.

With such a palette, the architect can create a roof which is actually a symphony of color—and these colors, being a part of the material itself, have a rich, velvety texture which paint or stain could not give, and which possesses absolute permanency.

THE IDEAL ROOF

This brief summary of facts cannot fail to convey to the prospective builder the suggestion that before deciding upon his roof he will do well to go into the question of copper roofing thoroughly.

No charge of exaggeration can be brought against the statement that copper makes the ideal roof.

"A roof should not cost too much yet should cost enough to insure perfect service forever."

Copper, whether in sheet or shingle form, makes a roof which is impervious to the elements and unaffected by temperature

or by fire. It makes a roof which is economical both in the saving of structural framing due to its light weight, and because of its permanent freedom from maintenance or replacement costs. Its first cost is its last cost.

Added to these practical considerations, the copper roof is a thing of beauty, with a color range adaptable to any type of house or to any environment.

Copper makes the roof which is practical, permanent, economical and beautiful—in short, the ideal roof.